

**Addendum**  
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This addendum provides new information on small mammals collected in Lake Roosevelt National Recreation Area (LARO), Whitman Mission National Historic Site (WHMI), and John Day Fossil Beds National Monument (JODA) during the 2002-2003 inventories conducted by the University of Idaho and NPS Upper Columbia Basin Network (UCBN). In 2002 and 2003, incidental mortality and some targeted snap-trapping led to the collection of 169 individual small mammal voucher specimens. Specimens were carefully bagged, labeled, and frozen. In 2004, an agreement was made between the UCBN and the Burke Museum in Seattle, Washington, for specimen preparation and curatorial services, and specimens were permanently loaned to the museum. Mammalogists at the museum considered these specimens of great interest and value and they have already been incorporated into a national collections database, the Mammal Networked Information System. In 2004, a University of Washington graduate student collected tissue for phylogeographic purposes from a water shrew (*Sorex palustris*) collected at Lake Roosevelt by the UCBN in 2003. This is yet another exciting example of the importance of sharing the results of NPS Inventory and Monitoring with the larger scientific community. Publications that utilize UCBN park specimens will be posted to the network website as they become available.

Several significant discoveries were made by the Burke Museum during preparation and preservation of specimens. Standard protocol for this type of work requires an in-depth look at dentition and other skull features not possible under field conditions, and allows for positive identification of shrews and other cryptic species. Most notable among them is the determination by a University of Washington expert on shrews (Soricidae) that the LARO specimens thought to be dusky shrews (*Sorex monticolus*) are in fact vagrant shrews (*Sorex vagrans*). Medial tines on the incisors, identified by UCBN staff and by museum staff as characteristic of *S. monticolus* were contrasted with molariform teeth that possessed clear characteristics belonging to *S. vagrans*, and a final determination was made based on these latter morphological features. This is significant for the park because *S. monticolus* is no longer a documented species in the park, although the species' range and habitat preferences suggest it probably does occur there. Another significant discovery for LARO is that all voles (*Microtus spp.*) tentatively identified as montane voles (*Microtus montanus*) under field conditions were positively identified as meadow voles (*Microtus pennsylvanicus*). As with shrews, members of the *Microtus* possess cryptic morphological characteristics not readily perceived under field conditions. Nonetheless, museum records from the Burke suggest that the montane vole also occurs in the park.

For the John Day Fossil Beds, the most significant discovery was that several more canyon mice (*Peromyscus crinitus*) were included in the collection than expected by

UCBN staff. As with the shrews and voles above, *P. crinitus* can be difficult to distinguish from the deer mouse (*Peromyscus maniculatus*) under field conditions. *P. crinitus* typically has longer and more lax pelage. Also, lactating females can be distinguished from congeners because they only have two rather than three pairs of mammae (Verts and Carraway 1998). This species is interesting for two reasons. First, the species is at the northernmost extent of its range in the central Oregon counties where the fossil beds occur. Second, it is strongly associated with sparsely vegetated talus slopes or rocky canyons. *P. maniculatus* typically out-competes *P. crinitus* in vegetated areas (Verts and Carraway 1998). However, little is known about this species in the northern parts of its range and it may be that it has often been overlooked and misidentified as *P. maniculatus* by other workers. In 2002, UCBN staff targeted talus slopes for *P. crinitus* and noted that captured *Peromyscus* were not displaying the typically lax pelage. However, several lactating females were collected with diagnostic mammae. Burke Museum staff also noted that pelage of specimens was not typical and difficult to distinguish from *P. maniculatus*. Examination of the accessory cusps of molariform teeth led to the determination that several specimens identified as *P. maniculatus* were actually *P. crinitus*, as were the specimens tentatively identified by UCBN staff as *P. crinitus*. Future field investigators working in central Oregon should be made aware of the fact that some populations of *P. crinitus* may be indistinguishable from *P. maniculatus* under field conditions. Also noteworthy is the fact that several of the *P. crinitus* specimens were collected in well vegetated areas, including a riparian zone along the edge of a small palustrine wetland. While most of our specimens were collected on unvegetated talus and rocky features, these other locations contradict published accounts of *P. crinitus* habitat associations and further indicate the likelihood of misidentification.

An additional discovery by the Burke was that two voles collected in the John Day Fossil Beds identified in the field as *Microtus montanus* were in fact long-tailed voles (*Microtus longicaudus*). This is significant because this species remained unconfirmed, although expected, during the 2002-2003 inventory. No changes or significant discoveries were made by the Burke for the specimens from Whitman Mission.

## **Summary of Changes to Existing Inventory Reports**

### Lake Roosevelt National Recreation Area

<b>Dusky Shrew</b> <i>Sorex monticolus</i>	Probably Present
<b>Vagrant Shrew</b> <i>Sorex vagrans</i>	Present      Uncommon      Breeder
<b>Montane Vole</b> <i>Microtus montanus</i>	Probably Present
<b>Meadow Vole</b> <i>Microtus pennsylvanicus</i>	Present      Common      Breeder

### John Day Fossil Beds National Monument

<b>Long-tailed Vole</b> <i>Microtus longicaudus</i>	Present      Uncommon      Breeder
<b>Canyon Mouse</b> <i>Peromyscus crinitus</i>	Present      SR,PH,CL      U      B

The canyon mouse was captured in talus fields, with which it is almost exclusively associated throughout its range. The species was also found outside its typical habitat in heavily vegetated areas and in the riparian zone of the palustrine wetland in the south end of the Sheep Rock Unit.

Table 1. Catalog and accession numbers for all specimens housed at the Burke Museum under this current accession.

Burke Accession #	UWBM	NPS Accession #	Collector #	Scientific Name
200482	77947	JODA-306	JODA-135	<i>Peromyscus truei</i>
200482	77948	JODA-306	JODA-136	<i>Peromyscus truei</i>
200482	77949	JODA-306	JODA-112	<i>Peromyscus</i> sp.
200482	77950	JODA-306	JODA-113	<i>Peromyscus</i> sp.
200482	77951	JODA-306	JODA-110	<i>Peromyscus maniculatus</i>
200482	77952	JODA-306	JODA-247	<i>Peromyscus truei</i>
200482	77953	JODA-306	JODA-137	<i>Sorex vagrans</i>
200482	77954	JODA-306	JODA-138	<i>Sorex vagrans</i>
200482	77955	JODA-306	JODA-139	<i>Sorex vagrans</i>
200482	77956	JODA-306	JODA-140	<i>Microtus montanus</i>
200482	77957	JODA-306	JODA-141	<i>Sorex vagrans</i>
200482	77958	JODA-306	JODA-007	<i>Peromyscus maniculatus</i>
200482	77959	JODA-306	JODA-008	<i>Peromyscus crinitus</i>
200482	77960	JODA-306	JODA-009	<i>Peromyscus maniculatus</i>
200482	77961	JODA-306	JODA-010	<i>Reithrodontomys megalotis</i>
200482	77962	JODA-306	JODA-011	<i>Peromyscus crinitus</i>
200482	77963	JODA-306	JODA-023	<i>Peromyscus maniculatus</i>
200482	77964	JODA-306	JODA-024	<i>Peromyscus crinitus</i>
200482	77965	JODA-306	JODA-001	<i>Peromyscus maniculatus</i>
200482	77966	JODA-306	JODA-002	<i>Peromyscus maniculatus</i>
200482	77967	JODA-306	JODA-004	<i>Peromyscus crinitus</i>
200482	77968	JODA-306	JODA-005	<i>Peromyscus maniculatus</i>
200482	77969	JODA-306	JODA-006	<i>Peromyscus maniculatus</i>
200482	77970	JODA-306	JODA-013	<i>Microtus longicaudus</i>
200482	77971	JODA-306	JODA-016	<i>Microtus montanus</i>
200482	77972	JODA-306	JODA-363	<i>Microtus montanus</i>
200482	77973	JODA-306	JODA-365	<i>Peromyscus truei</i>
200482	77974	JODA-306	JODA-220	<i>Dipodomys ordii</i>
200482	77975	JODA-306	JODA-223	<i>Dipodomys ordii</i>
200482	77976	JODA-306	JODA-235	<i>Dipodomys ordii</i>
200482	77977	JODA-306	JODA-090	<i>Dipodomys ordii</i>
200482	77978	JODA-306	JODA-299	<i>Peromyscus maniculatus</i>
200482	77979	JODA-306	JODA-091	<i>Peromyscus</i> sp.
200482	77980	JODA-306	JODA-100	<i>Peromyscus truei</i>
200482	77981	JODA-306	JODA-102	<i>Peromyscus</i> sp.
200482	77982	JODA-306	JODA-094	<i>Peromyscus</i> sp.
200482	77983	JODA-306	JODA-095	<i>Peromyscus truei</i>
200482	77984	JODA-306	JODA-104	<i>Peromyscus crinitus</i>
200482	77985	JODA-306	JODA-105	<i>Peromyscus crinitus</i>
200482	77986	JODA-306	JODA-108	<i>Peromyscus</i> sp.
200482	77987	JODA-306	JODA-292	<i>Dipodomys ordii</i>
200482	77988	JODA-306	JODA-293	<i>Peromyscus truei</i>
200482	77989	JODA-306	JODA-295	<i>Perognathus parvus</i>
200482	77990	JODA-306	JODA-402	<i>Dipodomys ordii</i>
200482	77991	JODA-306	JODA-403	<i>Dipodomys ordii</i>

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200482	77992	JODA-306	JODA-404	<i>Dipodomys ordii</i>
200482	77993	JODA-306	JODA-414	<i>Dipodomys ordii</i>
200482	77994	JODA-306	JODA-410	<i>Dipodomys ordii</i>
200482	77995	JODA-306	JODA-181	<i>Dipodomys ordii</i>
200482	77996	JODA-306	JODA-184	<i>Dipodomys ordii</i>
200482	77997	JODA-306	JODA-209	<i>Perognathus parvus</i>
200482	77998	JODA-306	JODA-178	<i>Reithrodontomys megalotis</i>
200482	77999	JODA-306	JODA-216	<i>Perognathus parvus</i>
200482	78000	JODA-306	JODA-217	<i>Reithrodontomys megalotis</i>
200482	78001	JODA-306	JODA-162	<i>Neotoma cinerea</i>
200482	78002	JODA-306	JODA-166	<i>Peromyscus crinitus</i>
200482	78003	JODA-306	JODA-169	<i>Peromyscus sp.</i>
200482	78004	JODA-306	JODA-171	<i>Peromyscus crinitus</i>
200482	78005	JODA-306	JODA-172	<i>Peromyscus crinitus</i>
200482	78006	JODA-306	JODA-186	<i>Reithrodontomys megalotis</i>
200482	78007	JODA-306	JODA-192	<i>Perognathus parvus</i>
200482	78008	JODA-306	JODA-155	<i>Dipodomys ordii</i>
200482	78009	JODA-306	JODA-156	<i>Dipodomys ordii</i>
200482	78010	JODA-306	JODA-157	<i>Dipodomys ordii</i>
200482	78011	JODA-306	JODA-199	<i>Dipodomys ordii</i>
200482	78012	JODA-306	JODA-267	<i>Reithrodontomys megalotis</i>
200482	78013	JODA-306	JODA-273	<i>Microtus montanus</i>
200482	78014	JODA-306	JODA-275	<i>Microtus montanus</i>
200482	78015	JODA-306	JODA-287	<i>Microtus montanus</i>
200482	78016	JODA-306	JODA-029	<i>Peromyscus maniculatus</i>
200482	78017	JODA-306	JODA-042	<i>Peromyscus maniculatus</i>
200482	78018	JODA-306	JODA-043	<i>Peromyscus maniculatus</i>
200482	78019	JODA-306	JODA-045	<i>Peromyscus sp.</i>
200482	78020	JODA-306	JODA-046	<i>Sorex vagrans</i>
200482	78021	JODA-306	JODA-069	<i>Peromyscus maniculatus</i>
200482	78022	JODA-306	JODA-073	<i>Reithrodontomys megalotis</i>
200482	78023	JODA-306	JODA-053	<i>Peromyscus crinitus</i>
200482	78024	JODA-306	JODA-055	<i>Peromyscus maniculatus</i>
200482	78025	JODA-306	JODA-077	<i>Peromyscus maniculatus</i>
200482	78026	JODA-306	JODA-027	<i>Sorex monticolus</i>
200482	78027	JODA-306	JODA-028	<i>Microtus montanus</i>
200482	78028	JODA-306	JODA-050	<i>Sorex vagrans</i>
200482	77902	JODA-306	JODA-254	<i>Sorex vagrans</i>
200482	77903	JODA-306	JODA-483	<i>Microtus longicaudus</i>
200482	77904	JODA-306	JODA-478	<i>Sorex vagrans</i>
200482	77905	JODA-306	JODA-479	<i>Sorex vagrans</i>
200482	77906	JODA-306	JODA-491	<i>Peromyscus truei</i>
200482	77936	JODA-306	JODA-332	<i>Peromyscus sp.</i>
200482	77907	JODA-306	JODA-333	<i>Peromyscus maniculatus</i>
200482	77937	JODA-306	JODA-335	<i>Peromyscus crinitus</i>
200482	77938	JODA-306	JODA-337	<i>Peromyscus sp.</i>
200482	77939	JODA-306	JODA-340	<i>Peromyscus crinitus</i>
200482	77908	JODA-306	JODA-376	<i>Perognathus parvus</i>

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200482	77909	JODA-306	JODA-377	<i>Perognathus parvus</i>
200482	77940	JODA-306	JODA-467	<i>Reithrodontomys megalotis</i>
200482	77941	JODA-306	JODA-258	<i>Antrozous pallidus</i>
200482	77942	JODA-306	JODA-462	<i>Reithrodontomys megalotis</i>
200482	77943	JODA-306	JODA-470	<i>Reithrodontomys megalotis</i>
200482	77944	JODA-306	JODA-453	<i>Reithrodontomys megalotis</i>
200482	77910	JODA-306	JODA-012	<i>Perognathus parvus</i>
200482	77945	JODA-306	JODA-097	<i>Reithrodontomys megalotis</i>
200482	77911	JODA-306	JODA-237	<i>Myotis yumanensis</i>
200482	77946	JODA-306	JODA-240	<i>Myotis yumanensis</i>
200482	77912	JODA-306	JODA-257	<i>Sorex vagrans</i>
200482	77914	JODA-306	JODA-123	<i>Reithrodontomys megalotis</i>
200482	77913	JODA-306	JODA-265	<i>Sorex vagrans</i>
200482	77922	JODA-306	JODA-255	<i>Sorex vagrans</i>
200482	77921	JODA-306	JODA-263	<i>Microtus montanus</i>
200482	77920	JODA-306	JODA-264	<i>Sorex vagrans</i>
200482	77919	JODA-306	JODA-119	<i>Peromyscus truei</i>
200482	77918	JODA-306	JODA-120	<i>Peromyscus truei</i>
200482	77917	JODA-306	JODA-121	<i>Peromyscus truei</i>
200482	77926	LARO-92	LARO-132	<i>Perognathus parvus</i>
200482	77927	LARO-92	LARO-122	<i>Perognathus parvus</i>
200482	77928	LARO-92	LARO-136	<i>Perognathus parvus</i>
200482	77892	LARO-92	LARO-051	<i>Sorex vagrans</i>
200482	77925	LARO-92	LARO-052	<i>Microtus longicaudus</i>
200482	77924	LARO-92	LARO-003	<i>Tamias amoenus</i>
200482	77891	LARO-92	LARO-107	<i>Microtus pennsylvanicus</i>
200482	77929	LARO-92	LARO-109	<i>Sorex vagrans</i>
200482	77893	LARO-92	LARO-113	<i>Zapus princeps</i>
200482	77673	LARO-92	LARO-114	<i>Sorex palustris</i>
200482	77930	LARO-92	LARO-090	<i>Zapus princeps</i>
200482	77894	LARO-92	LARO-092	<i>Microtus pennsylvanicus</i>
200482	77931	LARO-92	LARO-094	<i>Sorex vagrans</i>
200482	77923	LARO-92	LARO-108	<i>Microtus pennsylvanicus</i>
200482	77932	LARO-92	LARO-102	<i>Sorex vagrans</i>
200482	77933	LARO-92	LARO-103	<i>Sorex vagrans</i>
200482	77895	LARO-92	LARO-105	<i>Sorex vagrans</i>
200482	77896	LARO-92	LARO-087	<i>Sorex vagrans</i>
200482	77934	LARO-92	LARO-089	<i>Sorex vagrans</i>
200482	77897	LARO-92	LARO-111	<i>Microtus pennsylvanicus</i>
200482	77898	LARO-92	LARO-095	<i>Microtus pennsylvanicus</i>
200482	77899	LARO-92	LARO-096	<i>Microtus pennsylvanicus</i>
200482	77935	LARO-92	LARO-112	<i>Microtus pennsylvanicus</i>
200482	77900	LARO-92	LARO-071	<i>Sorex vagrans</i>
200482	77901	LARO-92	LARO-081	<i>Microtus pennsylvanicus</i>
200482	77915	WHMI-184	WHMI-061	<i>Lasionycteris noctivagans</i>
200482	77916	WHMI-184	WHMI-063	<i>Myotis lucifugus</i>
200482	77882	WHMI-184	WHMI-065	<i>Microtus montanus</i>
200482	77881	WHMI-184	WHMI-007	<i>Microtus montanus</i>

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200482	77880	WHMI-184	WHMI-001	<i>Microtus montanus</i>
200482	77879	WHMI-184	WHMI-005	<i>Sorex vagrans</i>
200482	77878	WHMI-184	WHMI-006	<i>Microtus montanus</i>
200482	77877	WHMI-184	WHMI-054	<i>Reithrodontomys megalotis</i>
200482	77876	WHMI-184	WHMI-002	<i>Sorex vagrans</i>
200482	77875	WHMI-184	WHMI-003	<i>Microtus montanus</i>
200482	77874	WHMI-184	WHMI-004	<i>Sorex vagrans</i>
200482	77873	WHMI-184	WHMI-009	<i>Microtus montanus</i>
200482	77872	WHMI-184	WHMI-058	<i>Sorex vagrans</i>
200482	77871	WHMI-184	WHMI-067	<i>Sorex vagrans</i>
200482	77870	WHMI-184	WHMI-073	<i>Sorex vagrans</i>
200482	77867	WHMI-184	WHMI-050	<i>Sorex vagrans</i>
200482	77866	WHMI-184	WHMI-052	<i>Microtus montanus</i>
200482	77883	WHMI-184	WHMI-081	<i>Sorex vagrans</i>
200482	77869	WHMI-184	WHMI-082	<i>Sorex vagrans</i>
200482	77868	WHMI-184	WHMI-083	<i>Sorex vagrans</i>
200482	77865	WHMI-184	WHMI-025	<i>Perognathus parvus</i>
200482	77864	WHMI-184	WHMI-038	<i>Microtus montanus</i>
200482	77863	WHMI-184	WHMI-014	<i>Microtus montanus</i>
200482	77862	WHMI-184	WHMI-044	<i>Microtus montanus</i>
200482	77884	WHMI-184	WHMI-045	<i>Microtus montanus</i>
200482	77885	WHMI-184	WHMI-047	<i>Microtus montanus</i>
200482	77886	WHMI-184	WHMI-078	<i>Microtus montanus</i>
200482	77887	WHMI-184	WHMI-026	<i>Perognathus parvus</i>
200482	77888	WHMI-184	WHMI-028	<i>Microtus montanus</i>
200482	77889	WHMI-184	WHMI-042	<i>Peromyscus maniculatus</i>
200482	77890	WHMI-184	WHMI-043	<i>Peromyscus maniculatus</i>